

Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims

Claims 1-4 (Canceled).

5. (Currently Amended) ~~A method as claimed in claim 1 wherein:~~ A method of operating a wireless network of nodes, said nodes including receiver nodes and a user node, said method comprising:

for each of said nodes, defining a narrowband channel for extra-network communication;

establishing a wideband backbone for intra-network communication between said nodes;

engaging in communication over said narrowband channel at said receiver nodes to carry a signal between said receiver nodes and an extra-network location, said engaging operation comprises including receiving said signal at said receiver nodes;

communicating said signal as distinct bitstreams between said receiver nodes and said user node using said wideband backbone, said communicating operation comprises including forwarding said signal as said distinct bitstreams from said receiver nodes to said user node; and

~~said method further comprises:~~

determining, at said user node, a preferred bitstream of said signal from said distinct bitstreams; and

presenting said preferred bitstream to a destination.

6. (Original) A method as claimed in claim 5 further comprising instructing said receiver nodes to monitor for said signal over said narrowband channel.

7. (Original) A method as claimed in claim 5 further comprising:

establishing, prior to said forwarding operation, communication paths between each of said receiver nodes and said destination; and

defining said user node to be a closest common node to each of said receiver nodes along said communication paths.

8. (Original) A method as claimed in claim 5 further comprising demodulating said signal at said receiver nodes prior to said forwarding operation.

9. (Original) A method as claimed in claim 5 wherein said determining operation comprises:

temporally aligning said distinct bitstreams;
evaluating a signal quality criterion of each of said distinct bitstreams; and

selecting one of said distinct bitstreams in response to said evaluating operation as said preferred bitstream.

10. (Original) A method as claimed in claim 5 wherein said determining operation comprises:

temporally aligning said distinct bitstreams; and
ascertaining said preferred bitstream by a majority vote.

11. (Original) A method as claimed in claim 10 further comprising regulating a quantity of said receiver nodes used for said majority vote to be an odd number.

12. (Original) A method as claimed in claim 5 wherein said determining operation further comprises:

temporally aligning said distinct bitstreams;
weighting said distinct bitstreams according to a signal quality criterion of each of said distinct bitstreams; and
selectively combining said bitstreams in response to said weighting operation to determine said preferred bitstream.

13. (Original) A method as claimed in claim 12 wherein said method further comprises:

demodulating said signal at said receiver nodes; and
quantizing said signal at each of said receiver nodes to obtain each of said distinct bitstreams, said demodulating and quantizing occurring prior to said forwarding operation.

14. (Original) A method as claimed in claim 12 wherein:
said forwarding operation forwards information spectrums of said signal as said distinct bitstreams; and
said determining operation further comprises demodulating said preferred bitstream.

15. (Original) A method as claimed in claim 14 wherein said determining operation further comprises distinguishing said signal from an interference signal within each of said distinct bitstreams prior to said weighting operation.

Claim 16 (Canceled)

17. (Currently Amended) ~~A method as claimed in claim 16~~
~~wherein:~~

~~said method further comprises~~ A method of operating a
wireless network of nodes, said nodes including receiver nodes
and a user node, said method comprising:

for each of said nodes, defining a narrowband channel for
extra-network communication;

establishing a wideband backbone for intra-network
communication between said nodes;

engaging in communication over said narrowband channel at
said receiver nodes to carry a signal between said receiver nodes
and an extra-network location;

communicating said signal as distinct bitstreams between said
receiver nodes and said user node using said wideband backbone,
wherein said communicating operation includes receiving said
bitstreams at said receiver nodes from said user node over said
wideband backbone;

determining, for said each of said receiver nodes, a time
shift parameter and a frequency shift parameter relative to said
extra-network location; and

said engaging operation comprises transmitting said distinct
bitstreams as said signal from each of said receiver nodes toward
said extra-network location, and said transmitting operation
comprises adjusting, at said each of said receiver nodes, a
transmit time and a transmit frequency of said signal in response
to said time shift parameter and said frequency shift parameter
to facilitate constructive combining of said signal from said
each of said receiver nodes at said extra-network location.

Claims 18-19 (Canceled).

20. (Currently Amended) ~~A method as claimed in claim 18~~
~~wherein~~ A method of operating a wireless network of nodes
comprising:

selecting a first RF capability for a first one of said nodes
that defines a first narrowband channel for extra-network
communication;

selecting a second RF capability for a second one of said
nodes that defines a second narrowband channel for said extra-
network communication, said first and second RF capabilities
[[are]] being chosen from a group of disparate RF capabilities,
~~and said method further comprises:~~

receiving, at each of said nodes, configuration information
for a chosen RF capability from said group of disparate RF
capabilities; [[and]]

implementing, at said each node, said configuration
information to enable said extra-network communication utilizing
a narrowband channel defined by said chosen RF capability;

establishing a wideband backbone for intra-network
communication between said nodes;

engaging in communication over said second narrowband channel
at said second node to carry a signal between said second node
and an extra-network location; and

communicating said signal as a bitstream between said first
and second nodes using said wideband backbone.

21. (Currently Amended) ~~A method as claimed in claim 18~~
~~further comprising:~~ A method of operating a wireless network of
nodes comprising:

selecting a first RF capability for a first one of said nodes
that defines a first narrowband channel for extra-network
communication;

selecting a second RF capability for a second one of said nodes that defines a second narrowband channel for said extra-network communication;

establishing a wideband backbone for intra-network communication between said nodes;

engaging in communication over said second narrowband channel at said second node to carry a signal between said second node and an extra-network location;

communicating said signal as a bitstream between said first and second nodes using said wideband backbone;

engaging in communication over said first narrowband channel at said first node to carry a second signal between said first node and a second extra-network location; and

communicating said second signal as a second bitstream between said first and second nodes using said wideband backbone.

22. (Currently Amended) ~~A method as claimed in claim 18 further comprising~~ A method of operating a wireless network of nodes comprising:

selecting a first RF capability for a first one of said nodes that defines a first narrowband channel for extra-network communication;

selecting a second RF capability for a second one of said nodes that defines a second narrowband channel for said extra-network communication;

selecting, for a third one of said nodes, said second RF capability defining said second narrowband channel for said extra-network communication;

establishing a wideband backbone for intra-network communication between said nodes;

engaging in communication over said second narrowband channel at said second node to carry a signal between said second node and an extra-network location; and
communicating said signal as a bitstream between said first and second nodes using said wideband backbone.

23. (Original) A method as claimed in claim 22 wherein said bitstream is a first bitstream, and:

said engaging operation comprises receiving said signal at said second and third nodes;

said communicating operation comprises forwarding said signal as said first bitstream from said second node to said first node, and forwarding said signal as a second bitstream from said third node to said first node; and

said method further comprises:

determining, at said first node, a preferred bitstream of said signal from said first and second bitstreams; and
presenting said preferred bitstream to a destination.

24. (Original) A method as claimed in claim 23 wherein said determining operation comprises:

temporally aligning said first and second bitstreams;

evaluating a signal quality criterion of each of said first and second bitstreams; and

selecting one of said first and second bitstreams in response to said evaluating operation as said preferred bitstream.

25. (Original) A method as claimed in claim 24 wherein further comprising demodulating said signal at said second and third nodes prior to forwarding said first and second bitstreams.

26. (Original) A method as claimed in claim 23 wherein:
said method further comprises, selecting, for a fourth one of said nodes, said second RF capability defining said second narrowband channel for said extra-network communication;
receiving said signal at said fourth node over said second narrowband channel;
forwarding said signal as a fourth bitstream from said fourth node to said first node over said wideband backbone; and
said determining operation comprises:
temporally aligning said first, second, and third bitstreams; and
ascertaining said preferred bitstream by a majority vote.

27. (Original) A method as claimed in claim 26 wherein further comprising demodulating said signal at said second and third nodes prior to forwarding said first and second bitstreams.

28. (Original) A method as claimed in claim 23 wherein said determining operation comprises:
temporally aligning said first and second bitstreams at said first node;
weighting said first and second bitstreams according to a signal quality criterion of each of said first and second bitstreams; and
selectively combining said first and second bitstreams in response to said weighting operation to determine said preferred bitstream.

29. (Original) A method as claimed in claim 28 further comprising:

demodulating said signal at said second and third nodes prior; and

quantizing said signal at each of said second and third nodes to obtain said first and second bitstreams prior to said forwarding operation.

30. (Original) A method as claimed in claim 23 wherein:
said forwarding operation forwards information spectrums of said signal as said first and second bitstreams; and

said determining operation comprises:

temporally aligning said first and second bitstreams;

weighting said first and second bitstreams according to a signal quality criterion of each of said first and second bitstreams;

selectively combining said first and second bitstreams in response to said weighting operation to determine said preferred bitstream; and

demodulating said preferred bitstream.

31. (Original) A method as claimed in claim 30 wherein said determining operation further comprises distinguishing said signal from an interference signal within each of said first and second bitstreams prior to said weighting operation.

Claim 32 (Canceled).

33. (Currently Amended) ~~A method as claimed in claim 32 wherein said bitstream is a first bitstream, and said method further comprises:~~ A method of operating a wireless network of nodes comprising:

selecting a first RF capability for a first one of said nodes that defines a first narrowband channel for extra-network communication;

selecting a second RF capability for a second one of said nodes that defines a second narrowband channel for said extra-network communication;

selecting, for a third one of said nodes, said second RF capability defining said second narrowband channel for said extra-network communication;

establishing a wideband backbone for intra-network communication between said nodes;

engaging in communication over said second narrowband channel at said second node to carry a signal between said second node and an extra-network location;

communicating said signal as a first bitstream between said first and second nodes using said wideband backbone, said communicating operation including receiving said first bitstream at said second node from said first node over said wideband backbone;

receiving a second bitstream of said signal at said third node from said first node over said wideband backbone;

determining, for each of said second and third nodes, a time shift parameter and a frequency shift parameter relative to said extra-network location; [[and]]

adjusting, at each of said second and third nodes prior to said transmitting operation, a transmit time and a transmit frequency of said signal in response to said time shift parameter and said frequency shift parameter to facilitate constructive combining of said signal from said each of said second and third nodes at said extra-network location; and

said engaging operation includes transmitting said first bitstream as said signal from said second node toward said extra-network location.

Claims 34-36 (Canceled).

37. (Currently Amended) ~~A definable radio as claimed in claim 35 wherein said control processing section selectively converts an~~ A definable radio for use in a wireless network, said radio comprising:

a first software programmable transceiver configured for extra-network communication using a narrowband channel defined by a radio frequency (RF) capability, said RF capability being chosen from a group of disparate RF capabilities;

a second transceiver configured for intra-network communication over a wideband backbone;

a control processing section in communication with said first and second transceivers, said control processing section enabling said first software programmable transceiver to engage in communication over said narrowband channel to carry a signal between said radio and an extra-network location, and said control processing section enabling forwarding of said signal as a distinct bitstream over said wideband backbone between said second transceiver and a second definable radio, said control processing section extracting said signal from an information spectrum received at said first transceiver over said narrowband channel, converting said signal to said distinct bitstream for forwarding over said wideband backbone, and said control processing section selectively converting said information spectrum received at said first transceiver over said narrowband channel to said distinct bitstream prior to forwarding said distinct bitstream over said wideband backbone.

38. (Currently Amended) ~~A definable radio as claimed in claim 34 wherein~~ A definable radio for use in a wireless network, said radio comprising:

a first software programmable transceiver configured for extra-network communication using a narrowband channel defined by a radio frequency (RF) capability, said RF capability being chosen from a group of disparate RF capabilities;

a second transceiver configured for intra-network communication over a wideband backbone;

a control processing section in communication with said first and second transceivers, said control processing section enabling said first software programmable transceiver to engage in communication over said narrowband channel to carry a signal between said radio and an extra-network location, and said control processing section enabling forwarding of said signal as a distinct bitstream over said wideband backbone between said second transceiver and a second definable radio, wherein when said second transceiver receives multiple distinct bitstreams of said signal from other definable radios, [[and]] said control processing section determines a preferred bitstream of said signal from said multiple distinct bitstreams and presents said preferred bitstream to a destination.

39. (Original) A definable radio as claimed in claim 38 wherein said control processing section temporally aligns said multiple distinct bitstreams, evaluates a signal quality criterion of each of said multiple distinct bitstreams, and selects one of said multiple distinct bitstreams in response to said evaluating operation as said preferred bitstream.

40. (Original) A definable radio as claimed in claim 38 wherein said control processing section temporally aligns said multiple distinct bitstreams and ascertains said preferred bitstream by a majority vote.

41. (Original) A definable radio as claimed in claim 38 wherein said control processing section temporally aligns said multiple distinct bitstreams, weights said multiple distinct bitstreams, and selectively combines said multiple distinct bitstreams in response to said weighting operation to obtain said preferred bitstream.

42. (Currently Amended) ~~A definable radio as claimed in claim~~
34 A definable radio for use in a wireless network, said radio
comprising:

a first software programmable transceiver configured for
extra-network communication using a narrowband channel defined by
a radio frequency (RF) capability, said RF capability being
chosen from a group of disparate RF capabilities;

a second transceiver configured for intra-network
communication over a wideband backbone;

a control processing section in communication with said first
and second transceivers, said control processing section enabling
said first software programmable transceiver to engage in
communication over said narrowband channel to carry a signal
between said radio and an extra-network location, and said
control processing section enabling forwarding of said signal as
a distinct bitstream over said wideband backbone between said
second transceiver and a second definable radio, wherein said
control processing section extracts said signal from information
spectrums of distinct bitstreams received at said second
transceiver over said wideband backbone, determines a preferred
bitstream, and demodulates said preferred bitstream, and said

second transceiver presents said preferred bitstream to a destination.

43. (Original) A definable radio as claimed in claim 42 wherein prior to demodulation, said control processing section temporally aligns said received bitstreams, weights said received bitstreams according to a signal quality criterion of each of said distinct bitstreams, and selectively combines said distinct bitstreams to obtain said preferred bitstream.

44. (Original) A definable radio as claimed in claim 43 wherein prior to weighting said received bitstreams, said control processing section distinguishes said signal from an interference signal within each of said distinct bitstreams.

Claim 45 (Canceled).

46. (Currently Amended) ~~A wireless network as claimed in claim 45 further comprising~~ A wireless network comprising:
a first node selectively configured for extra-network communication over a first narrowband channel utilizing a first radio frequency (RF) capability;
a second node selectively configured for extra-network communication over a second narrowband channel utilizing a second RF capability, each of said first and second nodes being configured for intra-network communication utilizing a wideband backbone; and
a third node selectively configured for extra-network communication over said first narrowband channel utilizing said first radio frequency (RF) capability, wherein:
a first signal received at said first node over said first narrowband channel is forwarded to said second node over said wideband backbone as a first bitstream;

a second signal received at said second node over said second narrowband channel is forwarded to said first node over said wideband backbone as a second bitstream; and
when said first signal is received at said third node over said first narrowband channel, said third node forwards said first signal to said second node over said wideband backbone as a third bitstream, said second node determines a preferred bitstream from said first and third bitstreams, and said second node presents said preferred bitstream to a destination.